SECURITIES AND EXCHANGE COMMISSION WASHINGTON, D.C. 20549 **©**RM 11-K INUAL REPORT Pursuant to Section 15(d) of the Securities Exchange Act of 1934 X Annual Report Pursuant to Section 15(d) of the Securities Exchange Act of 1934 For the fiscal year ended December 31, 2005 or Transition Report Pursuant to Section 15(d) of the Securities Exchange Act of 1934 For the transition period from ____ Commission file number: 1-8485 MILACRON INC. RETIREMENT SAVINGS PLAN (full title of the plan) MILACRON INC. (Name of issuer) 2090 Florence Avenue Cincinnati, Ohio 45206 (Address and principal executive office)

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Milacron Inc. Benefit Plans Committee has duly caused this annual report to be signed by the undersigned thereunto duly authorized.

MILACRON RETIREMENT SAVINGS PLAN

Date: June 23, 2006

By:

Ross A. Anderson Vice President - Finance and Chief Financial Officer and Member of the Milacron Inc. Benefit Plans Committee

Financial Statements

December 31, 2005 and 2004

With

Report of Independent Registered Public Accounting Firm

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Clark, Schaefer, Hackett & Co.

CERTIFIED PUBLIC ACCOUNTANTS
BUSINESS CONSULTANTS

Report of Independent Registered Public Accounting Firm

Milacron Benefit Plans Committee:

We have audited the accompanying statement of net assets available for benefits of Milacron Retirement Savings Plan (the Plan) as of December 31, 2005, and the related statement of changes in net assets available for benefits for the year ended December 31, 2005. These financial statements are the responsibility of the Plan's management. Our responsibility is to express an opinion on these financial statements based on our audits. The financial statements of the Plan for the year ended December 31, 2004 were audited by other auditors whose report, dated June 15, 2005, expressed an unqualified opinion on those financial statements.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The Plan is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2005, and the changes in net assets available for benefits for the year then ended, in conformity with accounting principles generally accepted in the United States of America.

Our audit was conducted for the purpose of forming an opinion on the basic financial statements taken as a whole. The supplemental schedule of assets held for investment purposes is presented for purposes of additional analysis and is not a required part of the basic financial statements, but is supplementary information required by the Department of Labor's Rules and Regulations for Reporting and Disclosure under the Employee Retirement Income Security Act of 1974. This supplemental schedule has been subjected to the auditing procedures applied in the audit of the basic financial statements and, in our opinion, is fairly stated in all material respects in relation to the basic financial statements taken as a whole.

Clark, Stage, Hubett & Co.

Cincinnati, Ohio May 2, 2006

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Milacron Benefit Plans Committee

We have audited the accompanying statement of net assets available for benefits of Milacron Retirement Savings Plan (the Plan) as of December 31, 2004. This financial statement is the responsibility of the Plan's management. Our responsibility is to express an opinion on this financial statement based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statement is free of material misstatement. The Plan is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Plan's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statement, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statement referred to above presents fairly, in all material respects, the net assets available for benefits of the Plan as of December 31, 2004, in conformity with accounting principles generally accepted in the United States of America.

Cincinnati, Ohio
June 15, 2005

4000 Smith Road Suite 500 Cincinnati, OH 45209-1967 T 513.762.5000 F 513.241.6125 W www.grantthornton.com

Statements of Net Assets Available for Benefits

December 31, 2005 and 2004

<u>Assets</u>

	; }	<u>2005</u>	<u>2004</u>
Investments	\$	163,472,786	164,619,350
Contributions receivable:			
Participants		315,780	72,675
Employer		638,522	614,048
		954,302	686,723
Net assets available for benefits		164,427,088	165,306,073

See accompanying notes to financial statements.

Statement of Changes in Net Assets Available for Benefits

Year Ended December 31, 2005

Additions to net assets attributed to:		
Contributions:		
Participants	\$	6,690,122
Employer		1,394,005
Employer - noncash common stock of Milacron I	nc.	795,921
Rollovers		139,320
		9,019,368
Investment income:		
Net appreciation in fair value of investments		886,955
Interest and dividends		4,192,551
Total additions		14,098,874
Deductions from net assets attributed to:		
Benefit payments and withdrawals		14,976,756
Administrative expenses		1,103
Total deductions		14,977,859
Net decrease		(878,985)
Net assets available for benefits at:		
Beginning of year		165,306,073
End of year	\$	164,427,088

See accompanying notes to financial statements.

Notes to Financial Statements

December 31, 2005 and 2004

1. Description of Plan:

The following description of the Milacron Retirement Savings Plan (the Plan) provides only general information. Participants should refer to the Summary Plan Description for a more complete description of the Plan's provisions.

General

The Plan is a defined contribution plan sponsored by Milacron Inc. (the Company and Plan Sponsor) and covers all eligible employees of Milacron Inc. and other affiliated companies as designated by the Board of Directors. The Plan is subject to the provisions of the Employee Retirement Income Security Act of 1974 (ERISA).

Contributions

Participants may make pre-tax and post-tax compensation contributions of up to such percentages as specified by the Plan document. The pre-tax contributions may not exceed the maximum allowable deferral as defined by the Internal Revenue Code.

The Plan Sponsor makes quarterly contributions to the Plan, which vary by affiliated company participation. The quarterly contributions are defined by the supplements to the plan document. The Plan Sponsor also may make a matching contribution equal to the lesser of a specified percentage of each participant's eligible compensation or 50% of the amount of the participant's salary deferral contribution, with the exception of Pliers and Northern Supply employees. Plan Sponsor match contributions to the Plan are directed by the Plan Sponsor and its investment policy.

The Plan has annual compliance testing performed by Mercer Trust Company. The Plan's policy is to make corrective distributions in a timely manner and to accrue for the respective distributions if amount is determined to be material to the financial statements.

Rollover contributions

Participants may contribute amounts representing distributions from other qualified defined benefit or defined contribution plans, provided the rollover contribution is received by the Plan on or before the sixtieth day immediately following the participant's receipt of the rollover amount.

Notes to Financial Statements (continued)

1. Description of Plan (continued):

Participant accounts

Each participant's account is credited with the participant's contributions and allocations of (a) the Company's contributions and (b) Plan earnings. Allocations are based on participant earnings or account balances, as defined. Forfeitures are first applied against restorals and then against Company contributions made by the Plan Sponsor. The benefit to which a participant is entitled is the benefit that can be provided from the participant's account.

Vesting

Participants are vested immediately in their own contributions plus actual earnings thereon. Amounts in a participant's account attributable to Plan Sponsor basic contributions are fully vested after five years of service. Amounts in a participant's account attributable to Plan Sponsor match contributions made to the Plan prior to January 1, 2002 are fully vested after five years of service and those made January 1, 2002 and after are fully vested after three years of service. A participant also becomes fully vested upon total or permanent disability, upon attainment of age 65 or upon death before retirement.

Participant loans

Participants may borrow from their accounts a minimum of \$1,000 up to a maximum of the lesser of \$50,000 or 50% of their account balance, excluding Voluntary and Company Matching Contributions. The loans are secured by the balance in the participant's account and bear interest at a rate commensurate with local prevailing rates as determined quarterly by the Plan administrator. Principal and interest is paid ratably through payroll deductions and is credited to each participant's account balance.

Payment of benefits

Upon termination of service, a participant may receive a lump-sum amount equal to the vested value of the participant's account, defer their distribution, establish a distribution schedule, or may direct Putnam Fiduciary Trust Company (effective January 1, 2005, Mercer Trust Company), the trustee, to transfer payment directly into an IRA or another employer's qualified plan. Upon death, accounts are fully vested and the entire account value is distributed to the participant's beneficiary(ies).

Notes to Financial Statements (continued)

1. Description of Plan (continued):

Administrative expenses

The Plan Sponsor paid all expenses of administering the Plan, except for certain administrative services for loan, in-service withdrawals and termination distributions. If not paid by the Plan Sponsor, administrative expenses become a liability of the Plan.

Forfeitures

In the event a participant terminates employment prior to 100% vesting, the portion of employer contributions which is not vested is forfeited at that time. The forfeited amounts are used to reduce future employer contributions. At December 31, 2005 and 2004, there were \$32,217 and \$452,886 of forfeited nonvested accounts, respectively.

Plan amendments

On January 1, 2005, the Plan was amended to allow certain eligible participants (as defined in the Plan Document) to receive the Employer Basic Contribution of 4% of the eligible participant's covered compensation for the quarter.

On January 1, 2005, the Plan was amended to allow certain eligible participants (initially hired after January 1, 2005 and as defined in the Plan Document) to receive an Employer Matching Contribution percentage equal to 50% and shall not exceed 3% of the eligible participant's covered compensation for the quarter. All other participants (initially hired prior to January 1, 2005 and as defined in the Plan Document) will receive an Employer Matching Contribution percentage equal to 50% and shall not exceed 2% of the eligible participant's covered compensation for the quarter. The percentages above may be changed at anytime by the Plan Sponsor's Benefits Committee.

On March 28, 2005, the Plan was amended that if the participant's vested portion of their respective Plan account is in excess of \$1,000, distribution shall not be made prior to the last valuation date of the Plan year in which the Plan participant attains age 65 without the participant's written consent.

On July 1, 2005, the Plan was amended to allow all part-time employees regardless of division to participate in the Plan. Additionally, these employees (with the exception of those employed by MRO companies as defined in the Plan Document) are eligible for the Employer Matching Contribution. No part-time employees are eligible for the Employer Basic Contribution (except DME employees hired prior to January 26, 1996).

Notes to Financial Statements (continued)

2. Summary of Significant Accounting Policies:

Basis of accounting

The financial statements of the Plan are prepared under the accrual method of accounting.

Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of net assets available for plan benefits as of the date of the financial statements and the reported amounts of changes in net assets available for plan benefits during the reporting period. Actual results could differ from those estimates.

Investment valuation and income recognition

Money market accounts are valued at cost which approximates fair value. All other investments are recorded at fair value based on quotations obtained from national securities exchanges as of the end of the year. Participant loans are recorded as the unpaid principal balances of the individual loans.

Purchases and sales of investments are recorded on the trade date. Gains and losses on the sale of investments are calculated on the specific identification method. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date. The Plan presents in the statement of changes in net assets available for plan benefits the net appreciation or depreciation in the fair value of its investments, which consists of realized gains and losses and unrealized gains and losses on those investments.

Payment of benefits

Benefits are recorded when paid.

Notes to Financial Statements (continued)

2. Summary of Significant Accounting Policies (continued):

Risks and uncertainties

The Plan invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect participants' account balances and the amounts reported in the statement of net assets available for benefits.

3. Related Party Transactions:

During the year ended December 31, 2005, the Plan purchased, transferred, and sold or distributed to terminated participants shares of Milacron Inc. common stock as follows:

Number of shares purchased Cost Average cost per share	867,710 \$1,653,931 \$1.91
Number of shares sold or distributed Proceeds Average proceeds per share	682,849 \$1,346,723 \$1.97
Dividends	_

4. Investments:

The current value of individual investments that represent 5% or more of the Plan's net assets available for benefits at December 31 are as follows:

	<u>2005</u>	<u>2004</u>
Putnam Money Market Fund	\$14,057,677	\$14,431,602
Putnam Voyager Fund	40,223,583	44,243,104
Putnam Bond Index Fund	9,456,675	10,407,755
Washington Mutual Investors R4 Fund	32,586,396	34,530,627
Putnam International Equity Fund	16,316,450	15,267,004
Neuberger Berman Genesis Trust	10,843,860	**

^{**} Investment represents less than 5% of the Plan's net assets at the specified dated.

Notes to Financial Statements (continued)

4. Investments (continued):

During 2005, the Plan's investments (including investments purchased, sold as well as held during the year) appreciated (depreciated) in fair value as determined by quoted market prices as follows:

Shares of registered investment companies	\$ 4,894,482
Milacron Inc. common stock	(4,017,638)
Other investments including common stock and mutual funds	<u> 10,111</u>
	\$ <u>886,955</u>

5. Nonparticipant-Directed Investments:

Information about the net assets and the significant components of the changes in net assets relating to the nonparticipant-directed investments as of December 31 is as follows:

	<u>2005</u>	<u>2004</u>
Assets		
Investments:		
Putnam Money Market Fund	\$ <u>20</u>	\$ <u>30,480</u>
		Year ended
		December 31,
		2005
Change in net assets:	'	
Employer contributions		\$ 589,871
Interest and dividends		89
Benefit payments		(30,912)
Transfer out of restricted assets		(589,508)
	· •	\$ <u>(30,460</u>)

6. Plan Termination:

Although it has not expressed any intent to do so, the Company has the right under the Plan to discontinue its contributions at any time and to terminate the Plan subject to the provisions of ERISA. In the event of Plan termination, participants will be 100 percent vested in their employer and employee contributions.

Notes to Financial Statements (continued)

7. Tax Status:

The Plan received a determination letter from the Internal Revenue Service dated February 2, 2004, stating that the Plan is qualified under Section 401(a) of the Internal Revenue Code (the Code) and, therefore, the related trust is exempt from taxation. The Plan was subsequently amended and restated. The Plan Sponsor believes the Plan, as amended and restated, is being operated in compliance with the applicable requirements of the Code and, therefore, believes that the Plan is qualified and the related trust is tax exempt.

SUPPLEMENTAL INFORMATION

Form 5500 E.I.N. 31-1062125 Plan No. 008

Line 4i - Schedule of Assets Held for Investment Purposes

December 31, 2005

	(a)	(b)	1	(c)	(d)
		Description of inv	estment		` '
		including maturity	1		
	Identity of issuer, borrower,	of interest, collate	ral, par		Current
	lessor, or similar party	or maturity va	alue	Cost	value
			l i		
	Shares of registered investment companies		i		
*	Putnam Money Market Fund	14,057,677	shares	**	\$ 14,057,677
*	Putnam Bond Index Fund	659,461	shares	**	9,456,675
*	Putnam Money Market Fund-SDB	81,870	shares	**	81,870
*	S&P 500 Fund	113,430	shares	**	3,649,040
*	Putnam Voyager Fund	2,311,700	shares	**	40,223,583
*	Putnam International Equity Fund	624,434	shares	**	16,316,450
	Washington Mutual Investors R4 Fund	1,059,031	shares	**	32,586,396
	Dodge & Cox Balanced Fund	91,788	shares	**	7,466,040
	J.P. Morgan Diversified Midcap Growth Fun	125,020	shares	**	2,975,465
	Lord Abbett Midcap Value Fund	335,145	shares	**	7,510,608
	AIM Smallcap Growth Fund	119,375	shares	**	3,283,998
	PIMCO Total Return Fund	627,606	shares	**	6,589,864
	Neuberger Berman Genesis Trust	223,354	shares	**	10,843,860
	Templeton Foreign Fund	112,262	shares	**	1,423,484
	Baron Partners Fund	260	shares	**	4,796
	Berwyn Fund	102	shares	**	3,028
	Bridgeway Small-Cap Value Fund	233	shares	**	3,335
	Bridgeway Small-Cap Growth Fund	324	shares	**	4,394
	Forward Hoover Small-Cap Fund	124	shares	**	2,401
	Icon Energy Fund	106	shares	**	3,385
	Kinetics Small-Cap Oppurtunities Fund	108	shares	**	2,261
	NASDAQ-100 Index tracking stock	200	shares	**	8,082
	PowerShares Golden Dragon Halter USX Cl	100	shares	**	1,387
	PowerShares Wilderhill Clean Energy Fund	100	shares	**	1,619
	RS Partners Fund	150	shares	**	4,967
	RS Value Fund	279	shares	**	6,860
	Semiconductor HOLDRS Trust depositary re	100	shares	**	3,664
	Stratton Growth Fund	24	shares	**	1,054
	StreetTracks Gold Trust	60	shares	**	3,095
	T. Rowe Price New Horizens Fund	80	shares	**	2,532
	Third Avenue Real Estate Value Fund	41	shares	**	1,202
	Winslow Green Growth Fund	122	shares	**	 2,145
					 156,525,217

Form 5500 E.I.N. 31-1062125 Plan No. 008

Line 4i - Schedule of Assets Held for Investment Purposes

December 31, 2005

	(a)	(b)		(c)	(d)
		Description of inv	i		
		including maturity	, ,	8	
	Identity of issuer, borrower,	of interest, collate			Current
	lessor, or similar party	or maturity v	alue	Cost	value
	Common Stock				
*	Milacron Inc.	2,036,200	shares	\$ 18,979,823	\$ 2,565,612
	8x8 Inc.	1,000	shares	**	1,860
	Aber Diamond Corp.	3	shares	**	110
	Abgenix Inc.	700	shares	**	15,057
	Acmat Corp.	4	shares	**	67
	Advanced Micro Devices Inc.	100	shares	**	3,060
	Akamai Technologies Inc.	4	shares	**	80
	Ameristar Casinos Inc.	50	shares	**	1,135
	Ameriprise Financial Inc.	. 50	shares	**	2,050
	AM/TEX Oil & Gas Inc.	2,000	shares	**	120
	Apex Silver Mines Ltd.	100	shares	**	1,590
	API Electronics Group Corp.	150	shares	**	705
	Apollo Group Inc.	2	shares	**	121
	AVX Corp.	100	shares	**	1,448
	Bed Bath & Beyond Inc.	100	shares	**	3,615
	Best Buy Company Inc.	200	shares	**	8,696
	Buffalo Wild Wings Inc.	100	shares	**	3,321
	Bullion River Gold Corp.	1,000	shares	**	450
	Coca-Cola Enterprises Inc.	5	shares	**	96
	Coeur d'Alene Mines Corp.	500	shares	**	2,000
	Conexant Systems, Inc.	100	shares	**	226
	Con Space Communications Ltd.	17,500	shares	**	19,330
	Crystallex International Corp.	500	shares	**	1,070
	Deckers Outdoor Corp.	50	shares	**	1,381
	Dell Inc.	3	shares	**	90
	Dragon Gold Resource Inc.	200	shares	**	11
	Duke Energy Corp.	3	shares	**	82
	Ebay Inc.	54	shares	**	2,335
	Elan Corporation PLC	2,505	shares	**	34,895
	Empire Resources Inc.	3	shares	**	33
	Faro Technologies Inc.	100	shares	**	2,000
	Fidelis Energy Inc.	2,100	shares	**	294
	Geron Corporation	8,700	shares	**	74,907
	Goldcorp Inc.	200	shares	**	4,435
	~	200			.,

Form 5500 E.I.N. 31-1062125 Plan No. 008

Line 4i - Schedule of Assets Held for Investment Purposes

December 31, 2005

Description of investment	
including maturity date, rate	
	rent
	lue
lessor, or similar party or maturity value cost va	iuc
Common Stock (continued)	
Google Inc. 1 shares ** \$	415
Health Sciences Group Inc. 1,000 shares **	390
Instapay Systems Inc. 728 shares **	1
International Business Machines Corp. 25 shares **	2,055
Interpharm Holdings Inc. 1,000 shares **	1,240
J.P. Morgan Chase & Co. 100 shares **	3,969
Kinross Gold Corporation 250 shares **	2,299
Liberty Star Gold Corp. 2,000 shares **	2,400
Lucent Technologies Inc. 1,450 shares **	3,857
MCI Inc. 3 shares **	5 9
Microsoft Corp. 3 shares **	78
Nanogen Inc. 200 shares **	524
Newpark Resources Inc. 500 shares **	3,815
Omnivision Technologies Inc. 4 shares **	80
Procter & Gamble Co. 27 shares **	1,563
Quantum Fuel Systems Technologies World 100 shares **	268
Silver Star Energy Inc. 1,000 shares **	220
Sirius Satellite Radio Inc. 504 shares **	3,377
Starbucks Corp. 1,800 shares ** 5	4,018
Superconductor Technologies Inc. 4,000 shares ** \$	1,720
Sycamore Networks Inc. 200 shares **	864
Telecomunicações de São Paulo S.A. 8 shares **	164
White Mountains Insurance Group Ltd. 2 shares **	1,117
Williams Coal Seam Gas Royalty Trust 2 shares **	35
Yahoo Inc. 100 shares **	3,918
2,84	0,728
Participant Loans Interest rate 4.0 - 9.5% 4,10	5,318
Cash	1,523
\$ 163,47	2.786

^{*} Denotes a party-in-interest

^{**} Cost of asset is not required to be disclosed as investment is participant-directed.

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Plan Administrator of the Milacron Retirement Savings Plan:

We consent to incorporation by reference in the Registration Statement (No. 333-115949) on Form S-8 of Milacron Inc. of our report dated May 2, 2006, relating to the statements of net assets available for benefits of the Milacron Retirement Savings Plan as of December 31, 2005, and the related statements of changes in net assets available for benefits and the supplemental schedules for the years then ended, which report appears in the December 31, 2005 annual report on Form 11-K of the Milacron Retirement Savings Plan.

Clah, Schaefer, Hachett & Co.

Cincinnati, Ohio June 23, 2006

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the use of our report dated June 15, 2005, with respect to the statement of net assets available for benefits of Milacron Retirement Savings Plan as of December 31, 2004, included in the Annual Report (Form 11-K) for the year ended December 31, 2005.

Frontall

Cincinnati, Ohio June 23, 2006